

What is claimed is:

1. A method of treating, ameliorating, or preventing a hyperproliferative disease in a subject comprising administering to said subject a therapeutically effective dose of a gossypol compound and one or more second agent selected from an anticancer agent and radiation, with
5 the proviso that a combination of (\pm)-gossypol, heat, and radiation is not administered.

2. The method of claim 1, wherein said gossypol compound is provided in a dose that sensitizes said subject to treatment by said one or more second agents.

10

3. The method of claim 1, wherein said gossypol compound is (\pm)-gossypol.

4. The method of claim 1, wherein said gossypol compound is (-)-gossypol.

15

5. The method of claim 1, wherein said gossypol compound is (+)-gossypol.

6. The method of claim 1, wherein said gossypol compound is (\pm)-gossypolone.

7. The method of claim 1, wherein said gossypol compound is (-)-gossypolone.

20

8. The method of claim 1, wherein said gossypol compound is (+)-gossypolone.

9. The method of claim 1, wherein said gossypol compound is (\pm)-gossypol acetic acid.

25

10. The method of claim 1, wherein said gossypol compound is (-)-gossypol acetic acid.

11. The method of claim 1, wherein said gossypol compound is (+)-gossypol acetic acid.

12. The method of claim 1, wherein said gossypol compound is (\pm)-ethyl gossypol.

30

13. The method of claim 1, wherein said gossypol compound is (-)-ethyl gossypol.

14. The method of claim 1, wherein said gossypol compound is (+)-ethyl gossypol.

5 15. The method of claim 1, wherein said gossypol compound is (\pm)-hemigossypolone.

16. The method of claim 1, wherein said gossypol compound is (-)-hemigossypolone.

17. The method of claim 1, wherein said gossypol compound is (+)-hemigossypolone.

10

18. The method of claim 1, wherein said gossypol compound is (\pm)-apogossypol.

19. The method of claim 1, wherein said gossypol compound is (-)-apogossypol.

15 20. The method of claim 1, wherein said gossypol compound is (+)-apogossypol.

21. The method of claim 1, wherein said gossypol compound is (\pm)-apogossypol acetic acid.

20 22. The method of claim 1, wherein said gossypol compound is (-)-apogossypol acetic acid.

23. The method of claim 1, wherein said gossypol compound is (+)-apogossypol acetic acid.

25 24. The method of claim 1, wherein said gossypol compound is (\pm)-ethyl apogossypol.

25. The method of claim 1, wherein said gossypol compound is (-)-ethyl apogossypol.

26. The method of claim 1, wherein said gossypol compound is (+)-ethyl apogossypol.

30

27. The method of claim 1, wherein said hyperproliferative disease is associated with overexpression of a Bcl-2 family member protein.

28. The method of claim 27, wherein said Bcl-2 family protein is Bcl-2, Bcl-X_L, Mcl-1,
5 A1/BFL-1, BOO-DIVA, Bcl-w, Bcl-6, Bcl-8, or Bcl-y.

29. The method of claim 1, wherein said subject is a human.

30. The method of claim 1, wherein said hyperproliferative disease is cancer.
10

31. The method of claim 30, wherein said cancer is breast cancer, prostate cancer, pancreatic cancer, colon cancer, lung cancer, lymphoma, melanoma, or head-neck cancer.

32. The method of claim 30, wherein said cancer is metastatic.
15

33. The method of claim 30, wherein said cancer is a tumor and the treatment or amelioration results in regression of the tumor.

34. The method of claim 30, wherein said cancer is resistant to anticancer agent or radiation
20 therapy.

35. The method of claim 34, wherein said gossypol compound sensitizes said cancer to said anticancer agent or radiation therapy.

25 36. The method of claim 1, wherein said gossypol compound and said anticancer agent or radiation are administered simultaneously.

37. The method of claim 1, wherein said gossypol compound and said anticancer agent or radiation are administered sequentially.
30

38. The method of claim 37, wherein said gossypol compound is administered prior to said anticancer agent or radiation.

39. The method of claim 37, wherein said gossypol compound is administered after said
5 anticancer agent or radiation.

40. The method of claim 1, wherein said gossypol compound and said anticancer agent or radiation are administered with different periodicities, different durations, different concentrations, and/or different administration routes.
10

41. The method of claim 1, wherein said anticancer agent or radiation is selected from docetaxel, TAXOL, cisplatin, radiation therapy, and combinations thereof.

42. The method of claim 1, wherein said gossypol compound is (-)-gossypol and said
15 anticancer agent or radiation is selected from docetaxel, TAXOL, cisplatin, radiation therapy, and combinations thereof.

43. The method of claim 1, wherein said gossypol compound and said anticancer agent or radiation have a synergistic therapeutic effect.
20

44. The method of claim 1, wherein said disease is a neoplastic disease.

45. The method of claim 1, wherein said second agent is radiation.

25 46. A pharmaceutical composition comprising a gossypol compound and one or more anticancer agents.

47. The pharmaceutical composition of claim 46, wherein said gossypol compound is (-)-gossypol and said anticancer agent is selected from docetaxel, TAXOL, cisplatin, and
30 combinations thereof.

48. The pharmaceutical composition of claim 46, wherein said gossypol compound is (-)-gossypol acetic acid and said anticancer agent is selected from docetaxel, TAXOL, cisplatin, and combinations thereof.

5

49. A kit comprising a gossypol compound, one or more anticancer agents, and instructions for administering said gossypol compound and said anticancer agents to a subject.

50. The kit of claim 49, wherein said gossypol compound is (-)-gossypol and said
10 anticancer agent is selected from docetaxel, TAXOL, cisplatin, and combinations thereof.

51. The kit of claim 49, wherein said gossypol compound is (-)-gossypol acetic acid and said anticancer agent is selected from docetaxel, TAXOL, cisplatin, and combinations thereof.